

Public Space as a Sustainable Built Environment Feature

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Abstract

Together with the design and implementation of the 1999 General Town Planning (2nd Generation), the built-up area of Cluj-Napoca was considerably increased (was doubled, and then further increased through various interventions largely due to the private domain) especially to the south. In this area the built environment has developed in the last 15 years following certain coordinates which are proving to be unsustainable for the medium and long term. This paper examines the built environment represented by new urban forms, urban forms which features are defined with the purpose of establishing working hypotheses for the future development of the built environment, which should aim to the correction of existing urban forms and to the creation of new sustainable ones. To strive towards the ideal of sustainability, this paper argues that public spaces could be configured as parts of the constructive of the sustainable built environment system also in this part of town, which now operates to the detriment of natural environment and neighboring residents.

Rezumat

Odată cu conceperea și implementarea Planului Urbanistic General din anul 1999 (Generația II) intravilanul Municipiului Cluj-Napoca s-a mărit considerabil (s-a dublat, în timp crescând și mai mult prin diverse intervenții în mare parte ale domeniului privat) în special către zona de sud. În această zonă mediul construit s-a dezvoltat în ultimii 15 ani urmărind anumite coordonate ce se dovedesc a fi nesustenabile pe termen mediu și lung. Lucrarea de față analizează acest mediu construit reprezentat de noi forme urbane, forme urbane ale căror caracteristici sunt definite cu scopul stabilirii unor ipoteze de lucru pentru viitoarele dezvoltări ale mediului construit, ce trebuie să urmărească corectarea formelor urbane existente și crearea unor forme urbane sustenabile. Pentru a tinde către idealul sustenabilității, această lucrare susține faptul că spațiile publice sunt cele ce se pot configura sub forma de părți constructive ale sistemului mediului construit sustenabil și în această parte de oraș, care deocamdată funcționează în detrimentul mediului natural învecinat și al locuitorilor.

Keywords: public space, built environment, urban ecology, urban development.

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1. Introduction

The argument of this article is based on the premise that the mean to achieve a Sustainable Built Environment is using different typology of public space. These public space could be the background of different ecological forces that take place between various patches of habitat and so on, configured in a way that these forces are not altered or stopped.

Why public space in this context is considered to be o Sustainable Feature of the Built Environment?

The answer is rather simple: it can be more easily **controlled** – control over the design results, control achieved by certain regulation, design, function or purpose.

Another answer to the question why public space ought to be a Sustainable Built Environment Feature is **movement**. Public space implies movement, and this movement is one of the main characteristics of ecological greenways and of the idea of connectivity of a wider more complex ecological system.

The ratio of public space in regard to a certain area has to be regulated and provided by design.

These are some features that can be taken into consideration when dealing with the concept of public space used as a mean to achieve a certain degree of sustainability in urban areas.

To strive towards the ideal of sustainability, this paper argues that public spaces could be configured as pieces of the constructive of the sustainable built environment system also in the urban area of Cluj-Napoca, which now operates to the detriment of natural environment and neighboring residents.

2. Local context

Together with the design and implementation of the 1999 General Town Planning (2nd Generation), the built-up area of Cluj-Napoca was considerably increased (was doubled, and then further increased through various interventions largely due to the private domain) especially to the south. In this area the built environment has developed in the last 15 years following certain coordinates, which are proving to be unsustainable for the medium and long term.

The following figures present the limits of The 1991 General Town Planning – with red line, and the limits of The 1999 General Town Planning – with blue line (Figure 1), and the large area introduced inside the limits of the town highlighted, the yellow line representing the limits of the 2014 General Town Planning.

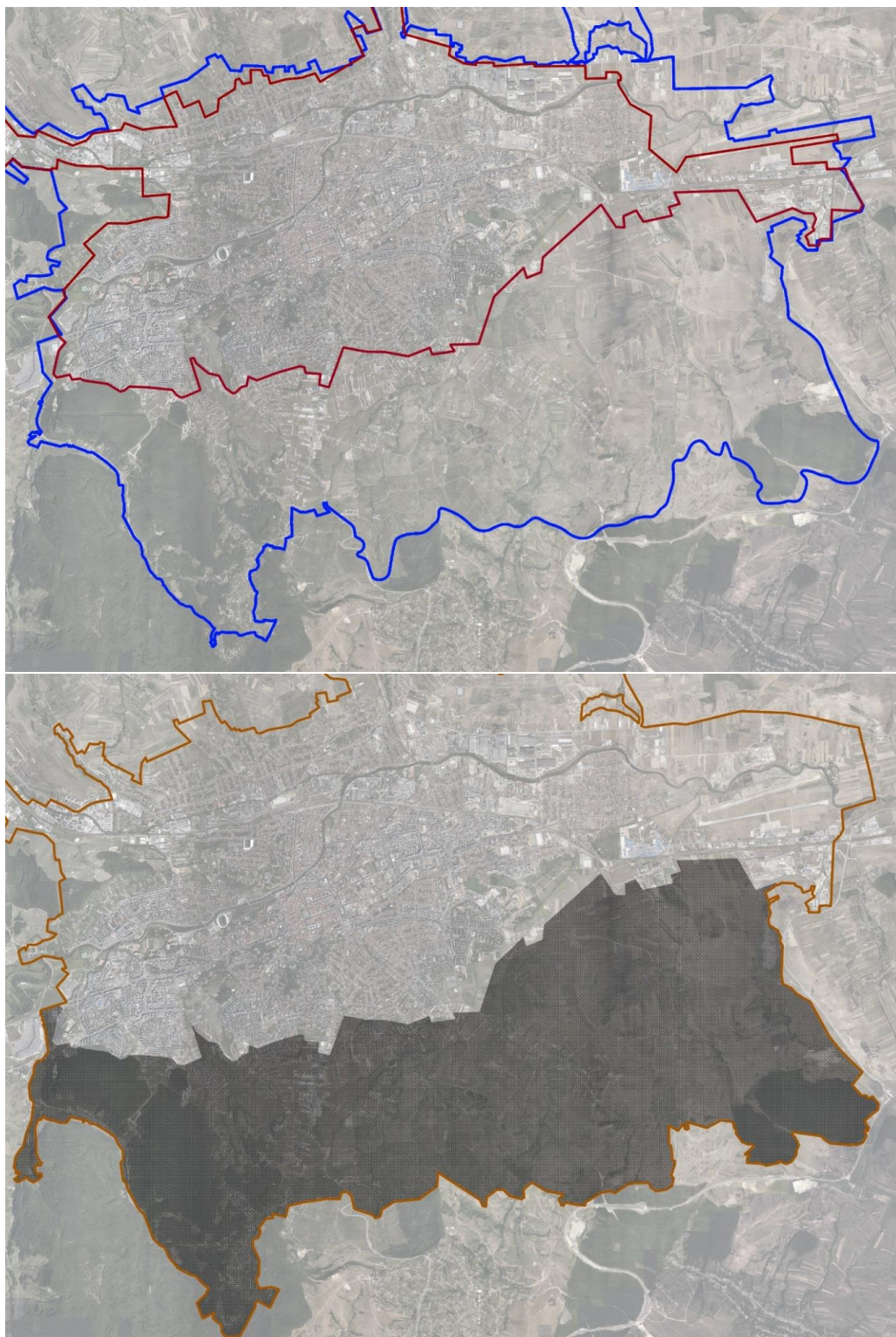


Figure 1. The 1991 GTP area and 1999 GTP area – limits overlay with „Google Earth” image of Cluj-Napoca (red line – the 1991 GTP limit, blue line – the 1999 GTP limit).

Figure 2. The new extension of the 1999 GTP limit – overlay with the 2014 GTP limit; the land surface introduced in the town by the 1999 GTP remains about the same in the 2014 GTP.

Data regarding the surface of each GTP after the 1989 Romanian Revolution.

Area of the 1991 GTP – 3978 ha

Area of the 1999 GTP – 6470 ha

Area of the 2014 GTP – 10 540 ha

Table 1. Evolution of Cluj-Napoca's area, population and population density.

Timeline	Surface of town (ha)	Population	Density (pop./ha)
sec. XV	45.2	6000	132.7
sf. sec. XVI	137	8250	60.2
sec. XVII	123.5	7000	56.7
sf. sec. XVIII	160	14000	87.5
sf. sec. XIX	700	50900	72.7
1910	700	62733	89.6
1923	990	85500	86.4
1930	1405	100844	71.8
1942	2092	115000	55.0
1976	3978	262000	65.9
1990	3978	320000	80.4
1999	6470	318000	49.1
2013	9838	325000	33.0
PUG 2014	10540	325000	30.8

The data regarding the historical evolution of Cluj-Napoca's population, town area and the density of population – confirms the fact that the city's density is decreasing over time, which comes in conflict with the principles of the ideal sustainable compact town. First following chart (Figure 3) shows the fact that after the 1989 Revolution the population of Cluj-Napoca remains almost the same, the second chart shows the fact that the area of the city is increasing even though the population remains the same (Figure 4), and so the density for this period is decreasing as well – fact showed by the Figure 5 chart.

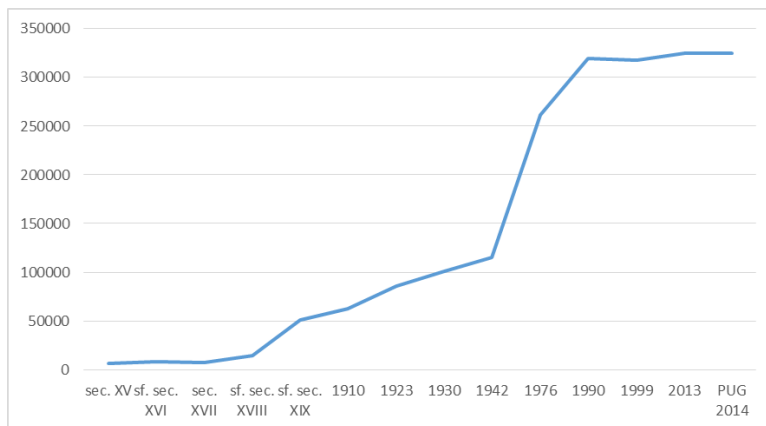


Figure 3. Chart of the evolution of Cluj-Napoca's population.

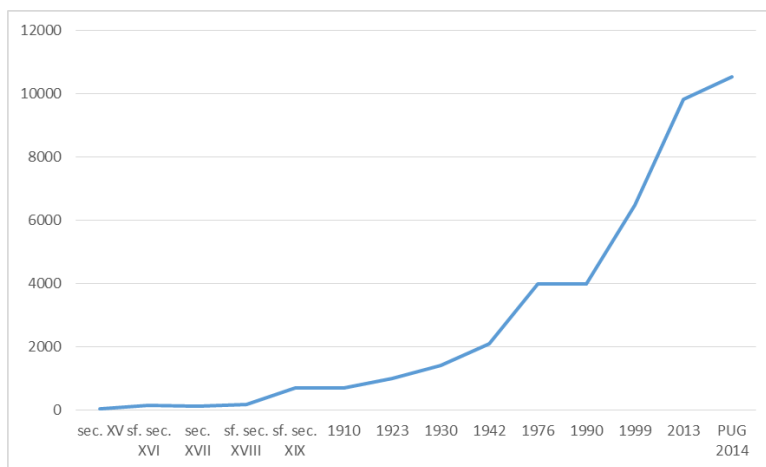


Figure 4. Chart of the evolution of Cluj-Napoca's area.

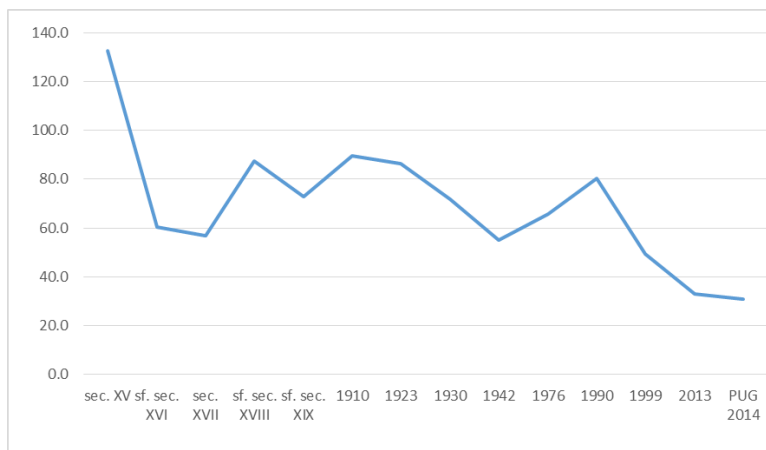


Figure 5. Chart of the evolution of Cluj-Napoca's population density.

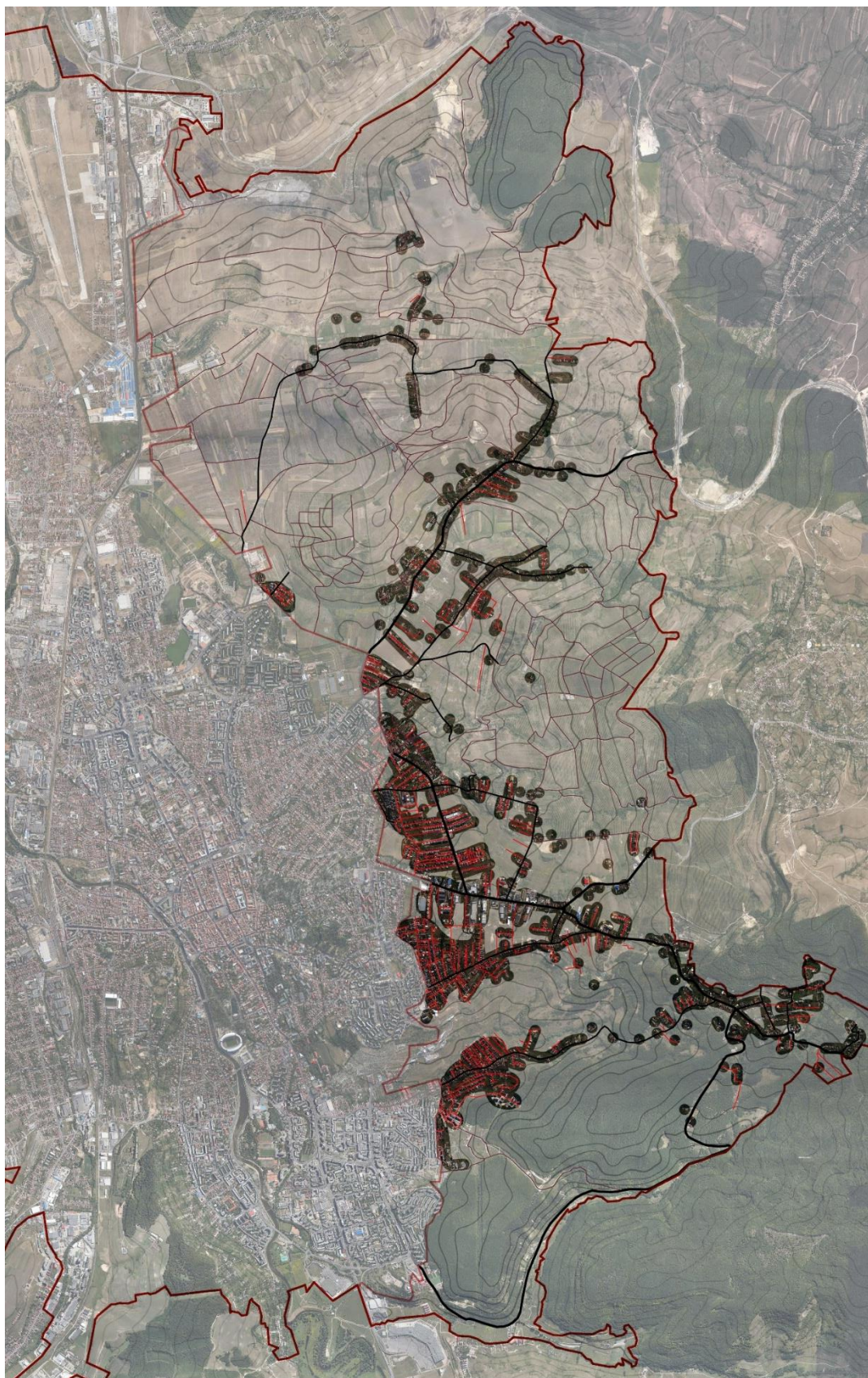


Figure 6. Plan of the area between the limits of the first GTP (1990) and the present GTP (2014) with the highlighting of the new built environment. Black lines – major circulation system; brown lines – rural and agrarian circulation system; red lines – new access streets to the new built developments.

The urban structure of the new built environment (which can be identified in Figure 6) has two major characteristics: it follows the existing agrarian circulation system and it follows the characteristics of the topography of the region. The second feature (it follows the topography of the region) is a somewhat elementary characteristic which can be identified in almost all urban developments - the topography of each region influences the form of developments by introducing certain limits and certain elements which control the new urban forms. The existing agrarian circulation system influences the developments in the same way, but being a less important structural feature, which can't support the new formed built environment by its transformation into public pace – new urban street system.



Figure 7. The new area introduced inside the town's limits by the 1999 GTP and the 2014 GTP limit (orange). Red area – the significant residential development between 1960 and 1989.

1. Eremia Grigorescu Neighborhood
2. Mănăstur Neighborhood
3. Plopilor-Şesului Neighborhood
4. Zorilor Neighborhood
5. Gheorgheni Neighborhood
6. Mărăşti Neighborhood
7. Aurel Vlaicu Neighborhood
8. Nicolae Titulescu street

The vicinity of socialist urban forms to these post-socialist urban areas (Figure 7) leads to some comparison between the two regarding the urban form characteristic for each type.

The change produced as a result of transformation of the way in which the built environment is conceptualized can be identified in: (1) the spatial articulation of the urban form; (2) the spatial scale of the urban form; (3) the spatial organization; (4) the land use and (5) the aesthetic character. The new post-socialist developments present themselves as some sort of atomization of the existing clear limits, where the physical boundaries of the city are blurred and the image created no longer can be described by rules.³

These transformations can be easily identified in the new developments around the former south limit of the 1990 GTP of Cluj-Napoca. The following 2 figures (Figure 8 and Figure 9) present the previous and the next existing situation of the built environment which are examples for each characteristic of the two urban forms mentioned – socialist and post-socialist.

One of the most important transformation which can be identified as base for the new post-socialist developments is the property type, which had transformed from public to private, thus inferring the further decrease of the scale of the new developments. The large domain of public property transformed into private property by privatization is a consistent barrier identified in applying large scale and long term solutions to the urban problems of almost all cities of Romania.

For the prominence of the new particular type of public space which defines the new post-socialist developments, we have made a short comparative study using plans of fragments of Cluj-Napoca (500 by 500 meters), where black represents the private property and white represents the public space. (Figure 10)

In Figure 10 at number 1 we have a fragment of inter-war tissue (Andrei Mureșanu Neighborhood), number 2 is a fragment of the beginning of XXth century urban tissue (Grigorescu Neighborhood), number 3 and 4 are representative for the socialist urban tissue (Gheorgheni and Mănăștur Neighborhoods), and 5, 6, 7 and 8 are fragments of the post-socialist urban tissue (Bună Ziua Neighborhood, Câmpului area and Borhanci area). What is very obvious is that the new public space is very different from the pre-socialist and socialist public space.

The new public space is characterized by discontinuity and a certain degree of chance in its formation, due to the greater importance emphasized on the private property.

The new public space identified by the implementation of the new built environment is a hybrid between the two previous types of public space: the public space of the pre-socialist capitalist era where public and private space were clearly defined, and the public space of the socialist urban tissue characterized by its indifference. This indifference is inherited by the post-socialist public space, which emulates the clear distinction between public and private, private property been the main aspect which is quantified by each residential development. So we can state that the two main characteristics of the new public space are: the inherited indifference and attitude of the socialist era, within the rules created by the clear capitalist distinction between public space and private property. (Figure 11)

³ Sonia Hirt, (2006), *Post-Socialist Urban Forms: Notes From Sofia*, „Urban Geography”, 27, 5



Figure 8. The limits of the socialist urban form.

Up – the south side of Mănăștur Neighborhood;

Middle – the south side of Zorilor Neighborhood;

Down – the south side of Gheorgheni Neighborhood.

(Plans of 1992 Cluj-Napoca's built environment. Red dotted line – the explicit limits of the socialist urban form.)



Figure 9. The same explicit limits of the socialist urban form next to the post-socialist urban development. With red is marked the new built environment.

- Up – the south side of Mănăștur Neighborhood;
- Middle – the south side of Zorilor Neighborhood;
- Down – the south side of Gheorgheni Neighborhood.

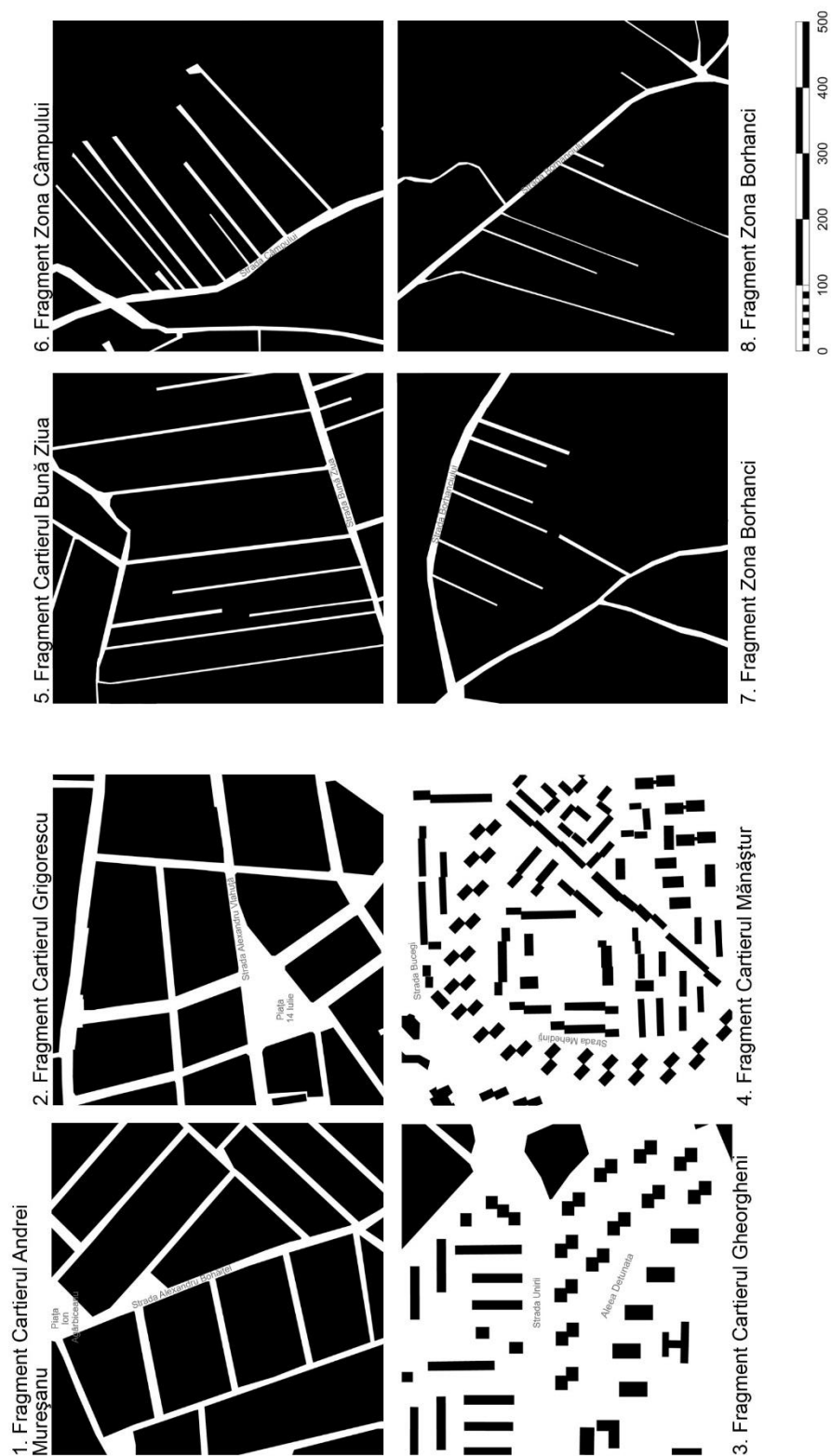


Figure 10. Fragments of Cluj-Napoca characteristic for the last century and today developments.



Figure 11.

- Pre-socialist public space - clear distinction between public space and private property;
- Socialist public space – indifference;
- Post socialist public space – a hybrid: inherited indifference and attitude of the socialist era, within the rules created by the clear capitalist distinction between public space and private property.

The general attitude towards the public space is one of projecting some kind of private manifestation by individual personalization of space or by creating physical boundaries and let everyone know that that is private property. The arguments for these kind of attitudes are found in different examples of limiting the public access on streets which are part of the town's circulation system or extending the private over the public property.

The same attitude can be found in the way the new streets are planned. The street is mainly configured for car accessibility, without taking in consideration the pedestrian comfort or the image of the street in general, which is an important part of the public space. The very small dimensions of the streets' profile, and the fact that almost all of them are clogged circulations, limit the possibility of transforming these paths in ecological greenways that connect different patches of habitat that exist in this region.

2. Public space as a built environment feature

For assuring a brighter future for further generation of Cluj-Napoca' inhabitants, one must rethink the way in which public space is conceptualized and the way in which the new developments are relating to the existing conditions of the natural site or the other built environment' elements.

This rethinking of the way in which built developments are coming into being should include a new view towards the urban structure, a view harmonized to key ecological elements for assuring a future sustainable development of the built environment.

In order to achieve a sense of sustainability of the future built environment the natural elements have to be introduced into a system – a green system, which can be configured according to the existing hydrographic system which is already naturally interconnected.

The way in which the new built environment is configured has to be in harmony with this green system in order to benefit from the ecological services that it could provide. The green belt which can be anticipated in the south of the city could connect the hydrographic system where the rivers take shape, their paths functioning as ecological greenways towards the rest of the built environment of the city. (Figure 13)

These ecological greenways have a very important function in this area being home for different species of plants and animals, connecting different patches of significant habitat and assuring a viable number of population of the existing species. These greenways could be transformed in spaces for leisure activities – or in other terms they could be social-ecological spaces.

So this is the new perspective, or the new step that this article emphasizes for the development of this area, being the conceptualization of this greenways as public space – public space which can be considered a sustainable built environment feature. Sustainability for the area can further be defined by the algorithm provided by the relation between ecological, social and economical features.

A large amount of the studied area is private property lurking to be economically exploited by mainly residential developments.

Having this spoiled vision in creating new developments, only with the economic perspective in mind, the key in assuring a certain sustainable development lies in the possibility of transforming particular private property into public space. In order to achieve this, one has to create the proper mechanism for the development of built environment in relation to this transformation – private to public.

The built environment represented by these post-socialist urban forms is defined with the purpose of establishing working hypotheses for the future developments, which should aim to the correction of existing urban forms and to the creation of new sustainable ones.

Conceptualization of public space as a sustainable environment feature permits the conservation of ecology elements as holistic pieces of an integrated system of green public spaces.

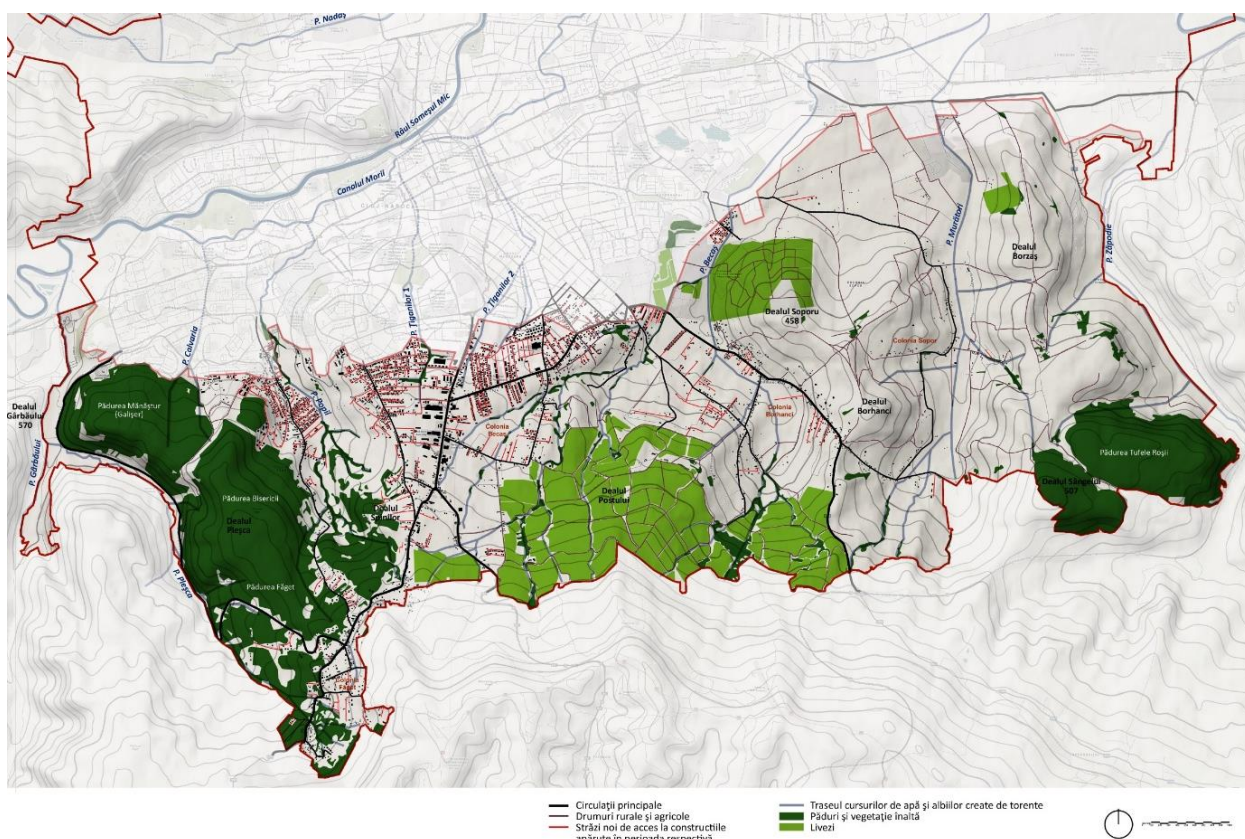
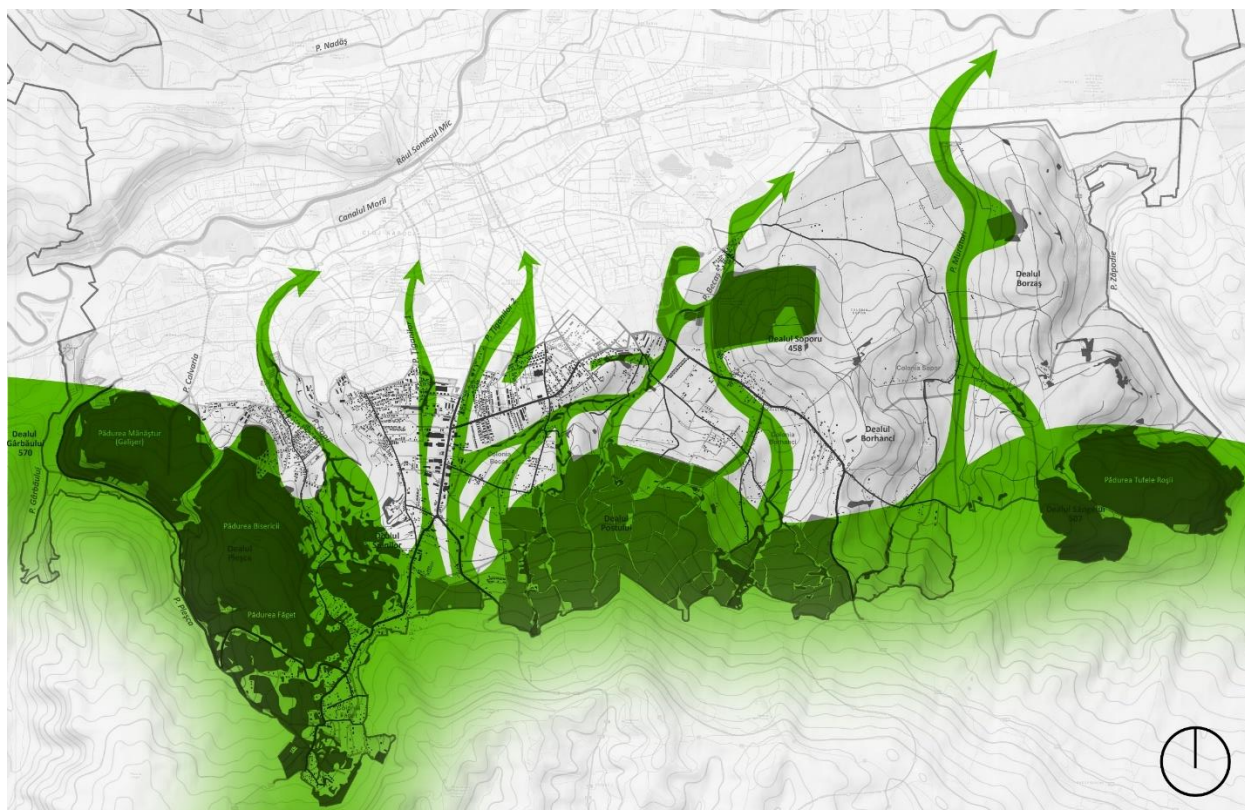


Figure 12. Plan of the area indicates: The built environment, the circulation system, the relief, the hydrographic system, the significant habitat patches.

Figure 13. One possibility for creating a green system of the area is by using the significant existing habitat patches and the hydrographic system of the area.

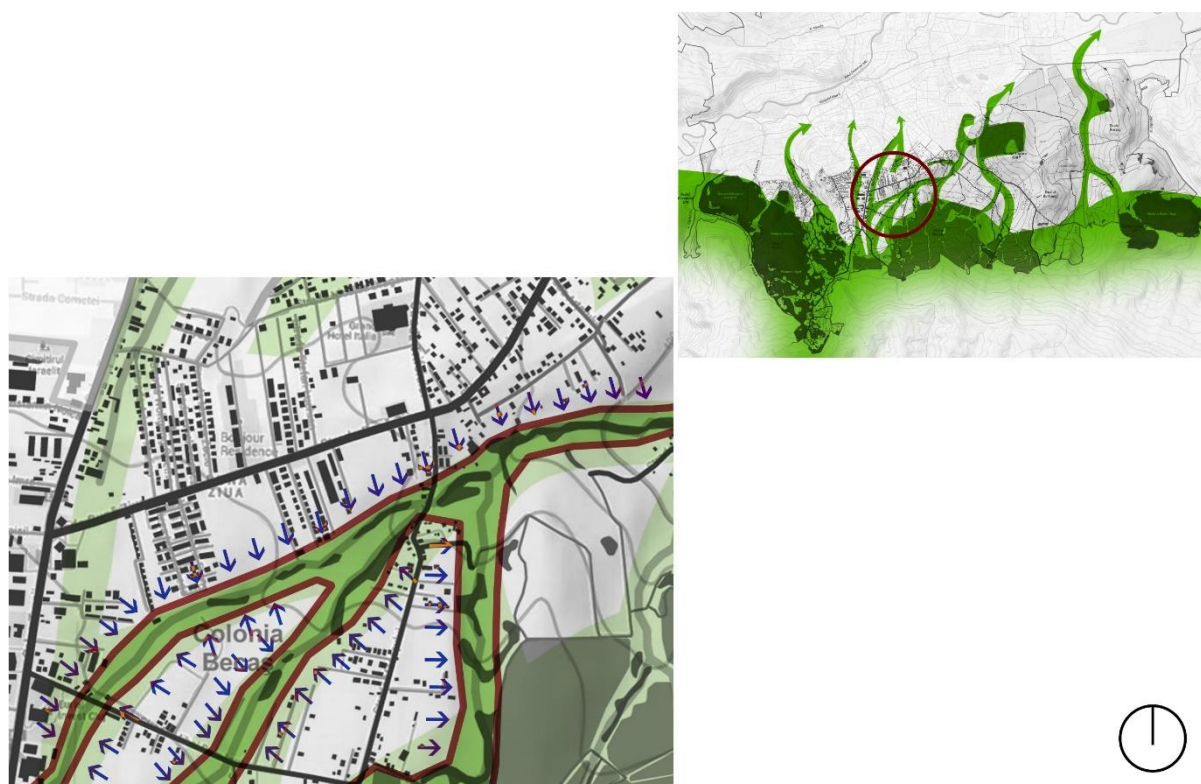


Figure 14. Detail of the overall green system as public space and the relation to the existing and future built environment.

Figure 14 presents a detailed image of a part of the green integrated system showing the possibility of transforming the path of the watersheds of the small rivers that cross this area into public spaces with different typologies and different degree of human access according to the composition of the different ecological patches.

The need of public space under the form of parks, public gardens, green streets, public squares is obvious, shown mainly in the pattern of movement of the present inhabitants, which at the end of the week overpopulate the few existing parks of the city, or they compensate this lack of social encounter by overpopulating the 2 city' malls.

These ideas don't exclude the other coordinates that have to come into consideration when thinking about a sustainable development solution which are:

- An urban model based on the concept of the neighborhood unit;
- Thinking everything from the pedestrian perspective first.



Figure 15. Aerial view of the area where we can see the indifferent relationship between the built environment and the watersheds present in the area.

Figure 16. The possible area which can be transformed into public space so everybody could benefit from the wellbeing that this kind of urban space can provide.

Bibliography:

1. Agachi, Mihaela Ioana Maria, *Clujul modern - aspecte urbanistice*, Ed. UTPress Cluj Napoca 2004/2.
2. Andrusz, Gregory, *Structural Change and Boundary Instability*, in Gregory Andrusz et al., (1996), *Cities After Socialism, Urban and Regional Change and the Conflict in Post-Socialist Societies*, Ed. Blackwell Publishers, Oxford.
3. Harloe, Michael, *Cities in the Transition*, in Gregory Andrusz et al., (1996), *Cities After Socialism, Urban and Regional Change and the Conflict in Post-Socialist Societies*, Ed. Blackwell Publishers, Oxford.
4. Hirt, Sonia, (2006), *Post-Socialist Urban Forms: Notes From Sofia*, „Urban Geography”, 27, 5.
5. Mitrea, Vasile, *Spre o gândire globală a municipiului*, în „Cluj-Napoca în Proiecte, 50 de ani, 1960-2010”, Imprimeria „Ardealul”, Cluj-Napoca.
6. Olănescu, Octav Silviu, (2014), *Aspecte ecologice în determinarea ambientului construit*, PhD thesis, TUCN.
7. Scheer, Brenda Case, (2001), *The Anatomy of Sprawl*, „Places”, 14:2.
8. Smith, David M. Smith, *The Socialist City*, in Gregory Andrusz et al., (1996), *Cities After Socialism, Urban and Regional Change and the Conflict in Post-Socialist Societies*, Ed. Blackwell Publishers, Oxford.
9. Szelenyi, Ivan, *Cities under Socialism – and After*, în Gregory Andrusz et al., (editori), (1996), *Cities After Socialism, Urban and Regional Change and the Conflict in Post-Socialist Societies*, Ed. Blackwell Publishers, Oxford.